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2055 GATEWAY PLACE
SUITE 550
SAN JOSE, CA 95110-1089

EXAMINER

KIM, PAUL

ART UNIT	PAPER NUMBER
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2161

MAIL DATE	DELIVERY MODE
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06/08/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/767,501

Applicant(s)

YU ET AL.

Examiner

Paul Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 15-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 15-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

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DETAILED ACTION

1. This Office action is responsive to the following communication: Amendment filed on 4 April 2007.
2. Claims 1-10 and 15-21 are pending and present for examination. Claim 1 is independent.

Response to Amendment

3. Claims 1, 15, 18 and 21 have been amended.
4. No claims have been cancelled.
5. No claims have been added.

Claim Rejections - 35 USC § 112

6. Applicant's amendment of claims 1, 15, and 21 is noted. Accordingly, the rejection under 35 U.S.C. 112 has been withdrawn.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. **Claims 1-5 and 8-10** are rejected under 35 U.S.C. 102(b) as being anticipated by Burroughs et al (U.S. Patent No. 6,076,090, hereinafter referred to as BURROUGHS), filed on 26 November 1997, and issued on 13 June 2000.

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9. As per independent claims 1, 18k, and 21, BURROUGHS teaches:

A method of operation within a database system, the method comprising:

receiving a request to execute a query {See BURROUGHS, C3:L37-44, wherein this reads over "[t]he schema map object may be generated in response to the completion of a transaction by the application program involving the object or in response to other suitable occurrences. The schema map object is preferably generated in response to the first transaction in which an object of a certain class is to be persisted and remains in memory for persisting, querying, restoring or deleting objects of that class"};

determining that a collection of data elements to be returned by the query corresponds to a first data structure containing data fields, wherein the data fields are not specified by a data type definition within a type dictionary of the database system {See BURROUGHS, C3:L53-65, wherein this reads over "a table is created in the database if a table does not yet exist for the class"};

obtaining attribute values that describe respective data fields within the first data structure {See BURROUGHS, C3:L53-65, wherein this reads over "the fields are preferably determined using Java Reflections methods, which allow the class object to be examined to determined, among other information, the names, data types and classes of the fields"}; and

recording, within the type dictionary, a first data type definition that specifies the data fields described by the attribute values {See BURROUGHS, C3:L53-65, wherein this reads over "[a] row in the table is defined that corresponds to the object to be persisted. One or more columns are defined that correspond to the fields"}.

10. As per dependent claim 2, BURROUGHS teaches:

The method of claim 1 further comprising recording, within the type dictionary, a second data type definition that defines an array of the first data type {See BURROUGHS, C7:L27-59, wherein this reads over "[t]his type of mapping of entities and their dependents (if any) is suitable for entities and dependents having fields declared to be of primitive data types, such as . . . array"}.

11. As per dependent claim 3, BURROUGHS teaches:

The method of claim 1 wherein obtaining attribute values that describe respective data fields within the first data structure comprises querying a data source to obtain the attribute values {See BURROUGHS, C6:L50-53, wherein this reads over "[t]he mapping depends upon the nature of the contents of the fields of the object. With certain exceptions, each field is mapped to one column"}.

12. As per dependent claim 4, BURROUGHS teaches:

The method of claim 3 wherein querying the data source to obtain the attribute values comprises communicating with a remote processing system via a network of one or more computer systems {See BURROUGHS, Figure 5A}.

13. As per dependent claim 5, BURROUGHS teaches:

The method of claim 1 wherein the first data structure includes rows and columns of data values, and wherein obtaining attribute values that describe respective data

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fields within the first data structure comprises obtaining a list of column names and column types {See BURROUGHS, C3:L53-65, wherein this reads over "a table is created in the database if a table does not yet exist for the class. A row in the table is defined that corresponds to the object to be persisted. One or more columns are defined that correspond to the fields"}.

14. As per dependent claim 8, BURROUGHS teaches:

The method of claim 1 wherein recording a first data type definition comprises:

generating a data type name {See BURROUGHS, C3:L53-65, wherein this reads over "a table is created in the database if a table does not yet exist for the class. A row in the table is defined that corresponds to the object to be persisted. One or more columns are defined that correspond to the fields"};

associating the data type name with names of the data fields {See BURROUGHS, C3:L53-65, wherein this reads over "a table is created in the database if a table does not yet exist for the class. A row in the table is defined that corresponds to the object to be persisted. One or more columns are defined that correspond to the fields"}; and

recording the data type name and the names of the data fields in the type dictionary {See BURROUGHS, C4:L3-5, wherein this reads over "the values read from the fields are stored in the columns of that row of the table in accordance with the correspondence between the columns and the fields"}.

15. As per dependent claim 9, BURROUGHS teaches:

The method of claim 8 wherein generating the data type name comprises incrementing an identifier value associated with a previously generated name, the incremented identifier value constituting, at least in part, the data type name {See BURROUGHS, C7:L15-24, wherein this reads over "a universally unique identifier (UUID)" and "such a field may be a UUID, alternatively, it may be data pertinent to the object, such as a person's name, employee number or Social Security number"}.

16. As per dependent claim 10, BURROUGHS teaches:

The method of claim 8 wherein the names of the data fields are included in the attribute values and wherein associating the data type name with the names of the data fields comprises specifying the names of the data fields as component data elements of the first data type definition {See C7:L27-59}.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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18. **Claims 6-7, 15-17 and 19-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over BURROUGHS, in view of Official Notice.

19. **As per dependent claims 6 and 7**, the Office takes Official Notice that it would have been obvious to one of ordinary skill in the art that a binary large object (i.e. "blob") be returned, wherein a blob is a collection of binary data stored as a single entity in a database management system. Therefore, where it would have been obvious to one of ordinary skill in the art at the time the invention was claimed that an attribute value describe a blob, it would have been obvious to one of ordinary skill in the art that said attribute value(s) be returned accordingly.

20. **As per dependent claim 15**, the Office takes Official Notice that it would have been obvious to one of ordinary skill in the art that when a function such as a SQL statement is executed, a collection of aggregate data values is returned.

21. **As per dependent claim 16**, the Office takes Official Notice that it would have been obvious to one of ordinary skill in the art that queries commonly indicate the type of value (e.g. an integer, text, or string) to be returned by a query.

22. **As per dependent claim 17**, BURROUGHS, in combination with Official Notice, discloses:

The method of claim 16 wherein the predetermined return type corresponds to an array of aggregate values {See BURROUGHS, C7:L27-59, wherein this reads over "[t]his type of mapping of entities and their dependents (if any) is suitable for entities and dependents having fields declared to be of primitive data types, such as . . . array"} and indicates that each of the aggregate values includes component values in accordance with the first data structure {See BURROUGHS, C3:L53-65, wherein this reads over "a table is created in the database if a table does not yet exist for the class"}.

23. **As per dependent claim 19**, the Office takes Official Notice that it would have been obvious and widely-known to one of ordinary skill in the art to have a plurality of processors coupled to one another in a network.

24. **As per dependent claim 20**, the Office takes Official Notice that it would have been obvious to and widely-known to one of ordinary skill in the art that each set of storage devices be couple to a processor and a non-volatile storage device.

Response to Arguments

25. Applicant's arguments filed 4 April 2007 have been fully considered but they are not persuasive.

a. Rejections under 35 U.S.C. 102(b)

Applicant asserts the argument that "there is no disclosure in Burroughs about a type dictionary." See Amendment, page 10. The Examiner respectfully disagrees. It is noted that Burroughs et al discloses a method wherein rows and columns which correspond to an object are created in a table. See Burroughs et al, col. 3, lines 45-67. Furthermore, wherein class objects contain information such as names, data types and classes of the fields, it is noted that said disclosure would, to one of ordinary skill, read upon the claimed invention's features of a type dictionary containing data type definition that specifies data fields of a data structure.

Additionally, Applicant asserts the argument that while the data fields of the claimed invention are "initially not specified within the type dictionary of the database system," Burroughs discloses the use of only pre-existing data types. See Amendment, page 10. The Examiner respectfully disagrees. It is noted that Burroughs et al discloses that "[t]he schema map object may be generated in response to the completion of a transaction by the application program involving the object." See Burroughs et al, col. 3, lines 30-44. Furthermore, Burroughs et al continues by disclosing that "[t]he schema map object is preferably generated in response to the first transaction in which an object of a certain class is to be persisted." See Burroughs et al, col. 3, lines 30-44. Accordingly, it is noted that as in found in the claimed invention, Burroughs et al similarly discloses a system wherein a schema map object (i.e. the type dictionary) is generated in response to a first transaction (i.e. the initial query) and stored in a table corresponding to said object which does has not yet existed in a database.

Lastly, Applicant asserts the argument that "Burroughs could only disclose obtaining attributes about fields of unknown data types at the time of inserting row data in the relational table, not at the time of retrieval." The Examiner respectfully disagrees. It is noted that Burroughs et al discloses that the generation of a schema map object may be "in response to the

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completion of a transaction by the application program involving the object or in response to other suitable occurrences." See Burroughs et al, col. 3, lines 30-44. Accordingly, Burroughs et al discloses a system wherein upon the completion of a transaction (i.e. the request to execute a query) and the generation of a schema map (i.e. the collection of data elements to be returned by the query), fields of the object to be persisted are determined and if not present in a table of the database, a table is created for the class of the schema map object.

Accordingly, for the aforementioned reasons above, the rejections under 35 U.S.C. 102(b) are sustained.

b. Rejections under 35 U.S.C. 103(a)

Applicant asserts the argument that the Examiner's Official Notice is deficient in that the Examiner has not provided documentary evidence of proof for the Official Notice. The Examiner notes that the features claimed are well-known within the art. Because Applicant has inadequately traversed the Official Notice and is therefore deficient, no document evidence shall be provided by the Examiner. The Applicant is directed to MPEP 2144.03, which address the topic of Official Notice and clearly state the criteria for traversing an Official Notice. MPEP 2144.03, Part C states the following in part:

To adequately traverse such a finding, an applicant must specifically point out the supposed errors in the examiner's action, which would include stating why the noticed fact is not considered to be common knowledge or well-known in the art. See 37 CFR 1.111(b). See also Chevenard, 139 F.2d at 713, 60 USPQ at 241 ("[I]n the absence of any demand by appellant for the examiner to produce authority for his statement, we will not consider this contention."). A general allegation that the claims define a patentable invention without any reference to the examiner's assertion of official notice would be inadequate. (emphasis added)

If applicant does not traverse the examiner's assertion of official notice or applicant's traverse is not adequate, the examiner should clearly indicate in the next Office action that the common knowledge or well-known in the art statement is taken to be admitted prior art because applicant either failed to traverse the examiner's assertion of official notice or that the traverse was inadequate. (emphasis added).

Accordingly, because of Applicant's inadequate traversal, it is noted that the rejections of claims 6, 7 and 15-17 have been modified to indicate that the limitations of the claim, which are well-known in the art, are to be taken as admitted prior art.

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Conclusion

26. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

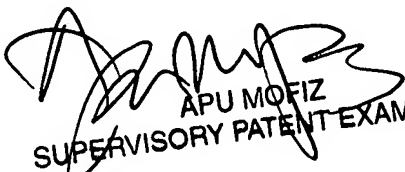
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Kim whose telephone number is (571) 272-2737. The examiner can normally be reached on M-F, 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Apu Mofiz can be reached on (571) 272-4080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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